



Complexity and uniqueness of
Great Salt Lake require.....
integrated management
guided by sound science.



UTAH DEPARTMENT of
ENVIRONMENTAL QUALITY
**WATER
QUALITY**

Great Salt Lake Water Quality Update

NRAE Legislative Interim Committee

Erica Brown Gaddis, PhD

DEQ Vision



Clean air, land, and water for a healthy and prosperous Utah.

Vision for Great Salt Lake



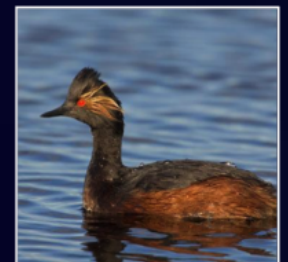
Water quality that supports important recreational, ecological, and economic benefits for current and future generations.

Brine Shrimp in Great Salt Lake

Commercial harvest - \$57 million
to Utah's economy



Keystone species in GSL
Ecosystem supporting



Eared Grebes
2+ million

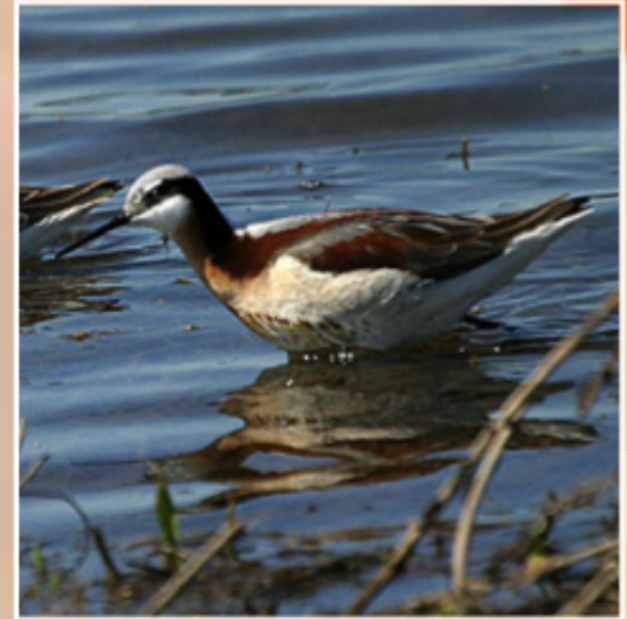
Shorebirds



American Avocets
(250,000 birds)



White-faced Ibis
World's largest
breeding population



Wilson's Phalarope
50% of the world
population

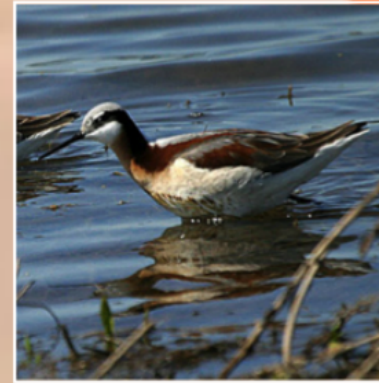
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Brine flies



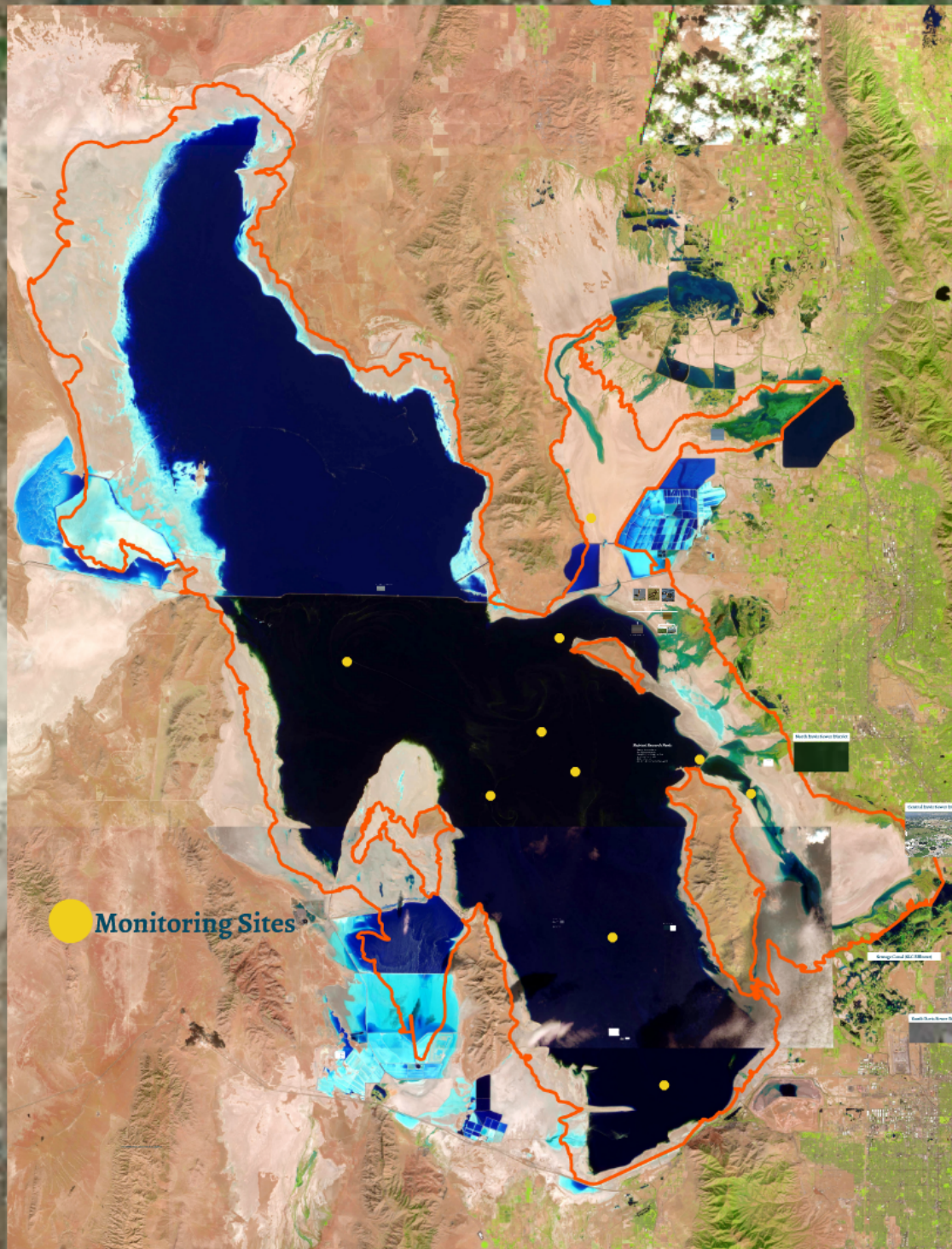
Bioherms (GSL Coral)



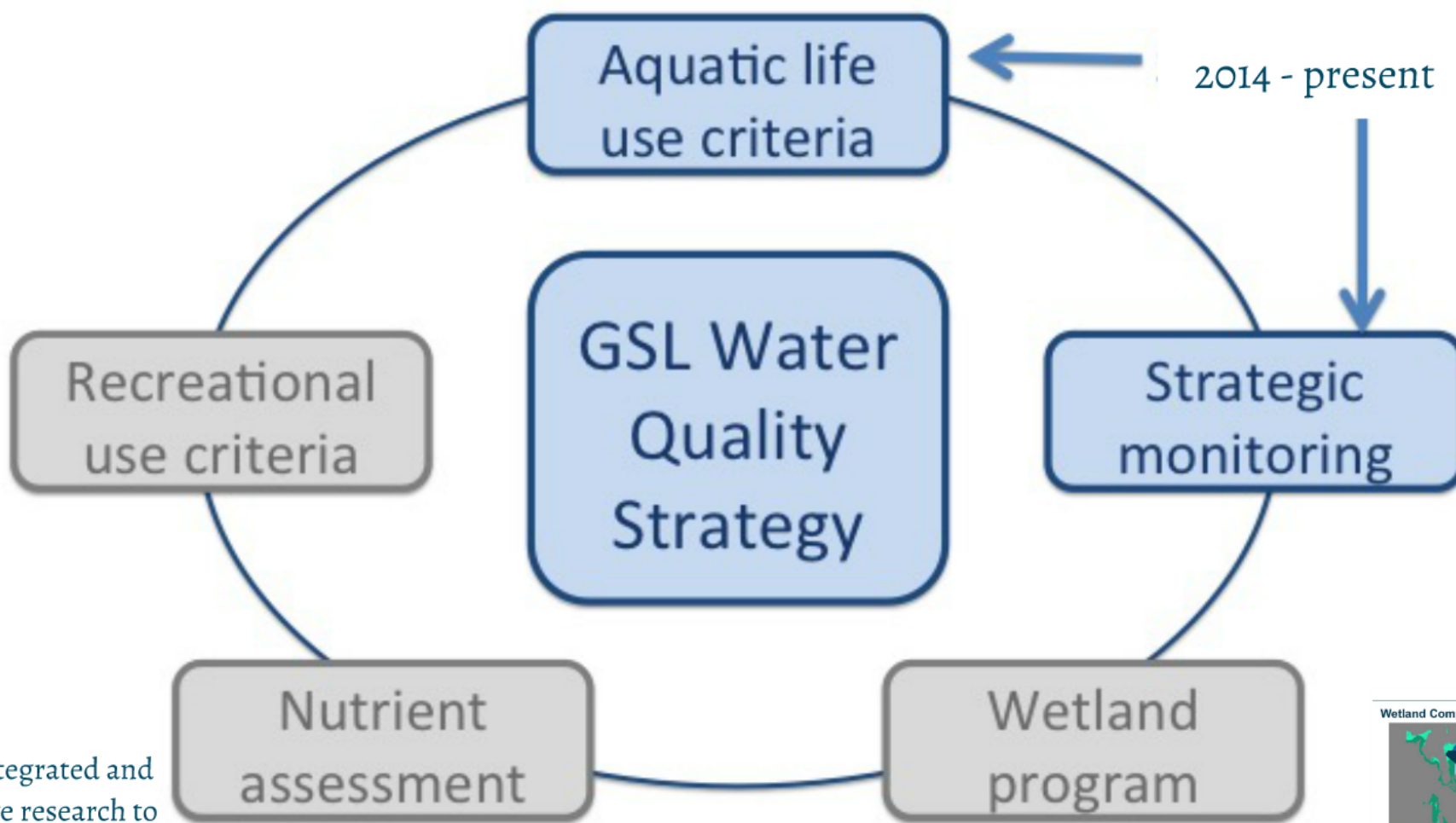
Macroinvertebrates



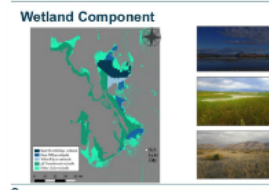
Wetlands



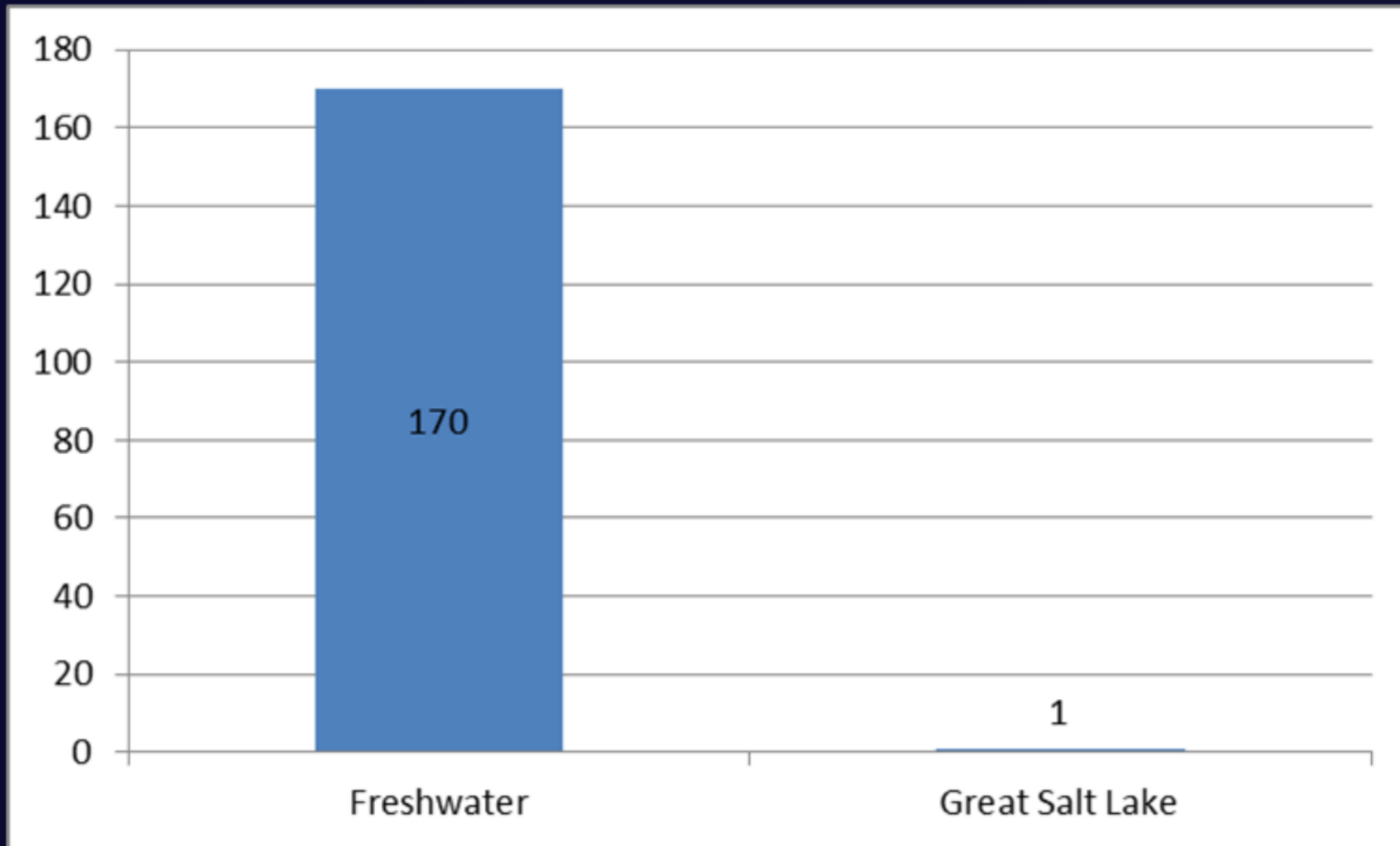
GSL Water Quality Strategy



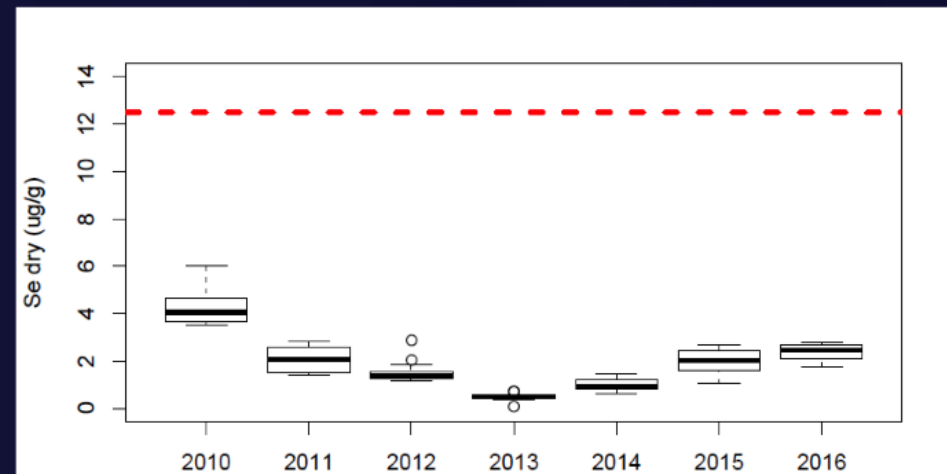
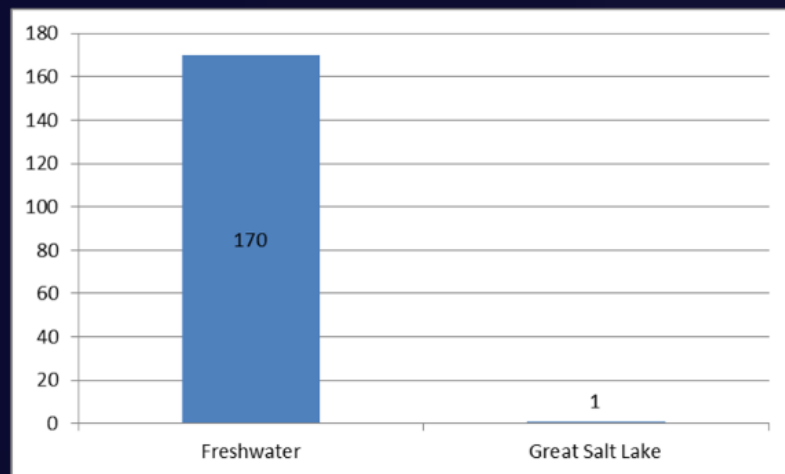
Need for integrated and collaborative research to inform decision making



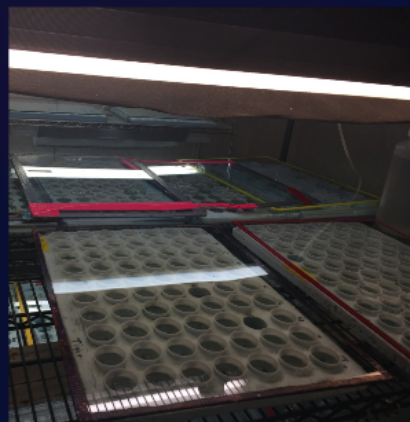
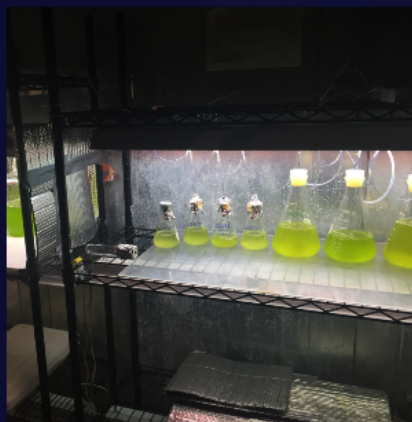
Water Quality Standards



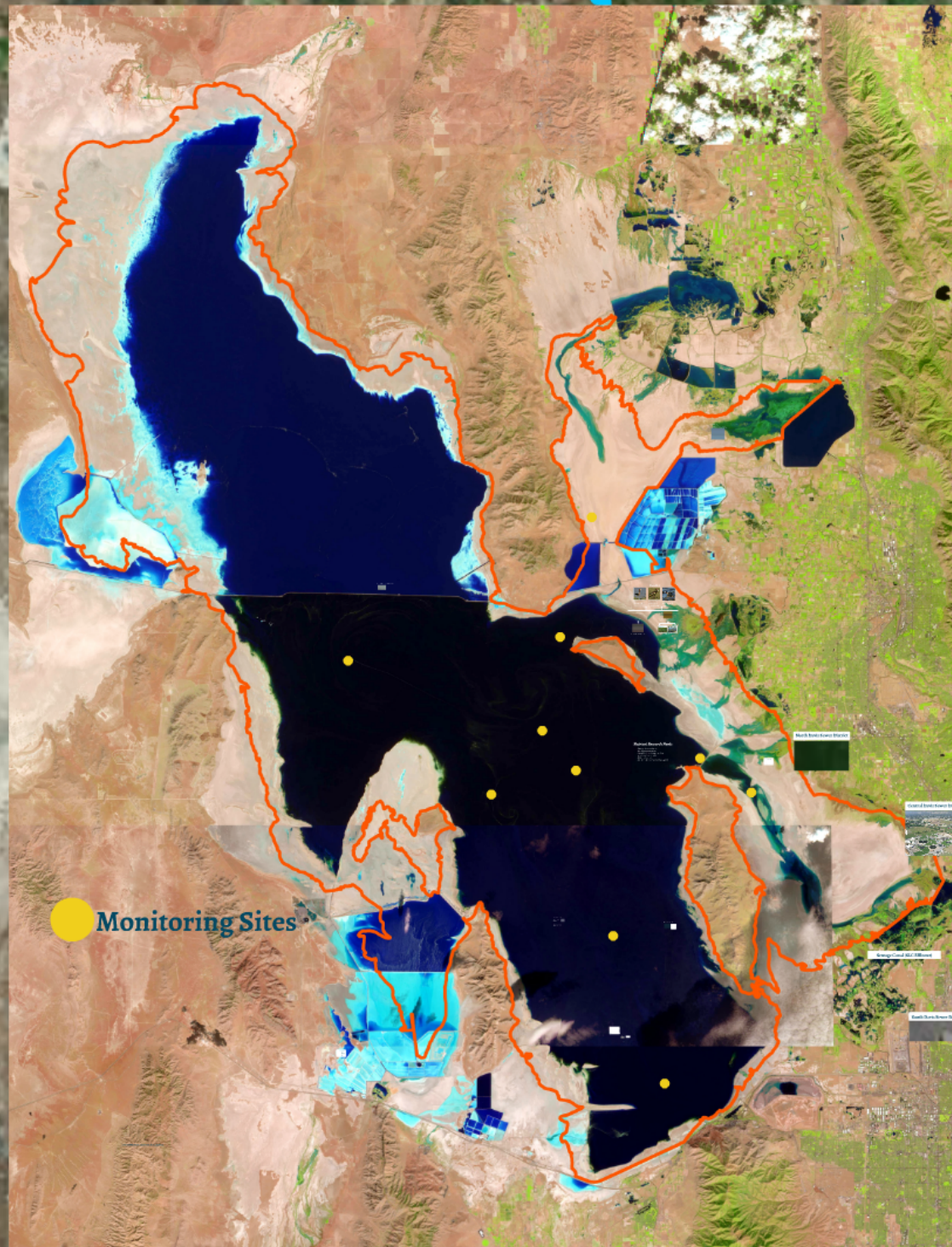
Water Quality Standards



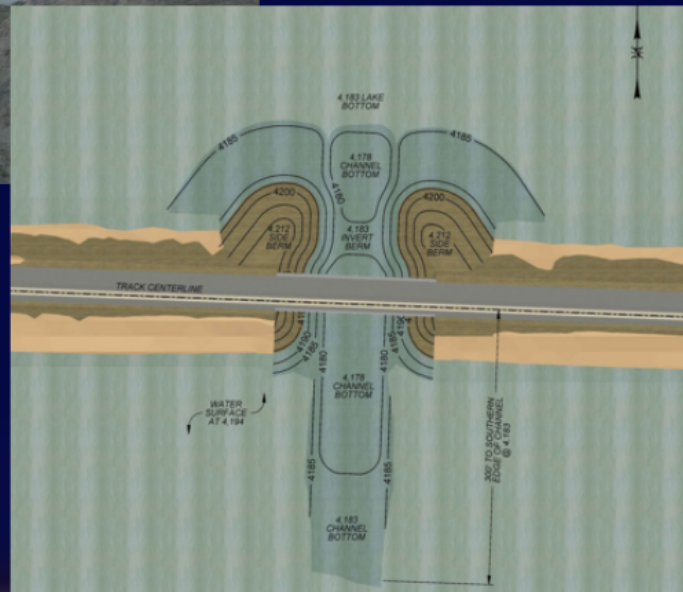
Selenium standard developed to protect shorebirds (2003 - 2008)



Brine Shrimp Toxicity Testing for lead, arsenic, and copper (2013 - present)



Union Pacific Railroad Causeway Bridge

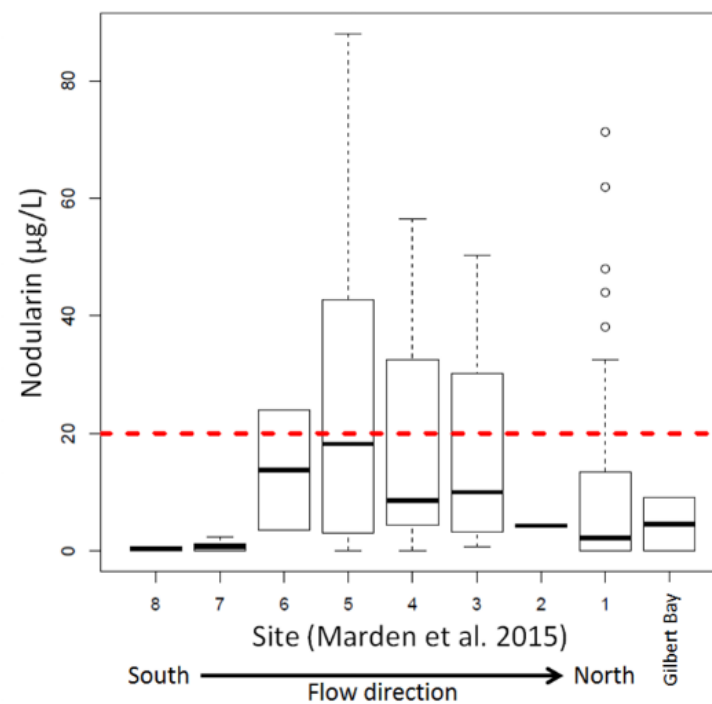
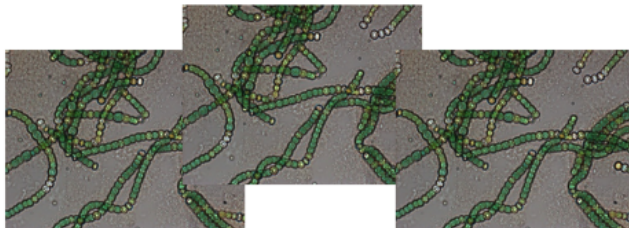
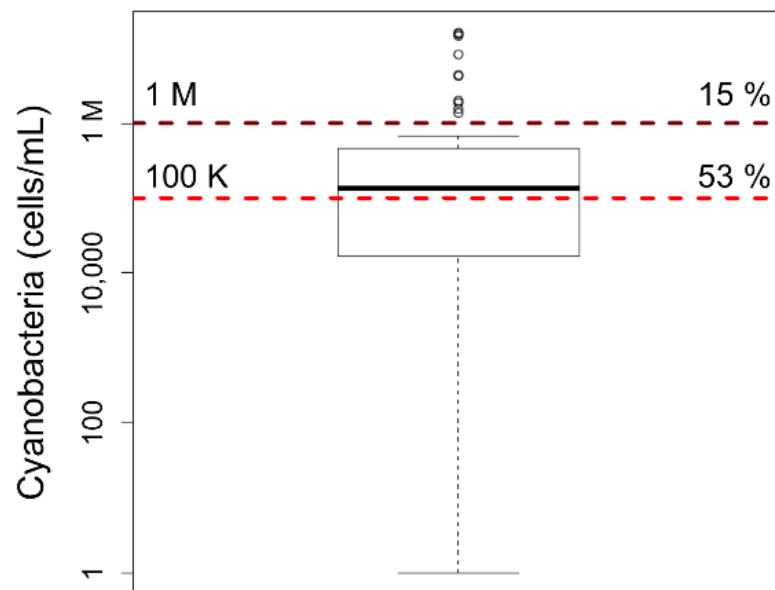


Willard Spur

- Unique and valuable ecosystem
- Site-specific numeric nutrient standards (5 year study)
- Resulted in relaxation of Perry-Willard nutrient permit limits



Nodularia Blooms - Farmington Bay



Nutrient Research Needs

- Nutrient balance and cycling
- Interlinkages between here
- Aquatic life: how do they take flux, macroinvertebrates, birds?
- Public health issues
- Interplay between water quantity and quality

North Davis Sewer District



Central Davis Sewer District

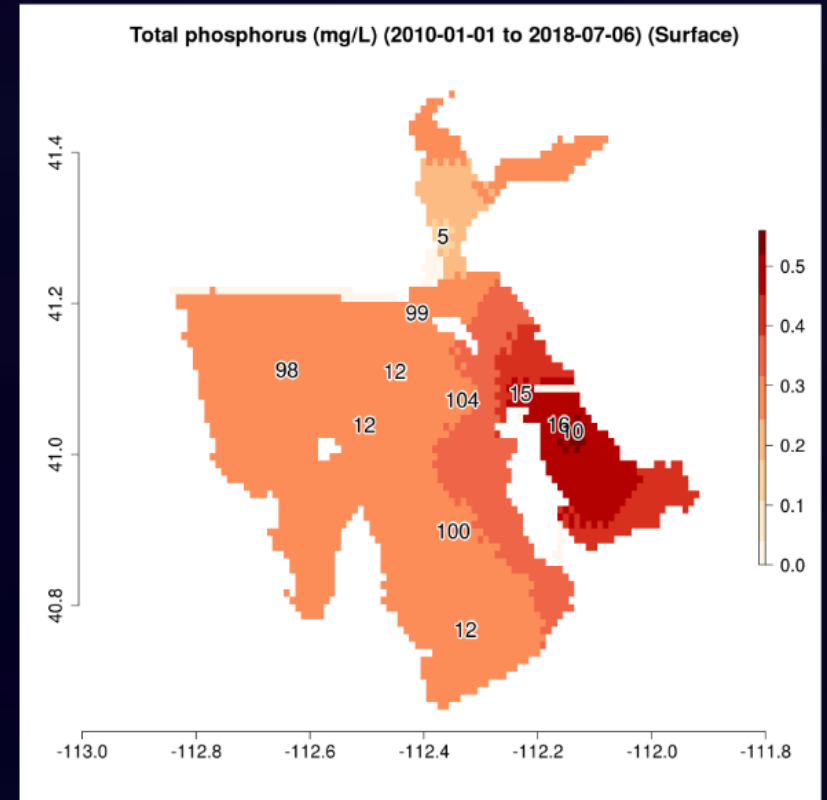


Sewage Canal (SLC Effluent)

South Davis Sewer District



Nutrient Variation in GSL



Nutrient Research Needs

- Nutrient balance and cycling
- Interlinkages between bays
- Aquatic life (brine shrimp, brine flies, macroinvertebrates, birds)
- Public health threat
- Interplay between water quantity and quality



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